

# Abrasive Product Manufacturing: 2002

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## 2002 Economic Census

*Manufacturing*

Industry Series



U S C E N S U S B U R E A U

*Helping You Make Informed Decisions*

U.S. Department of Commerce  
Economics and Statistics Administration  
U.S. CENSUS BUREAU



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-- Not applicable for this report.

# Table 1. Historical Statistics for the Industry: 2002 and Earlier Years

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry and year <sup>1</sup>	Com- panies <sup>2</sup>	All estab- lish- ments <sup>3</sup>	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expendi- tures (\$1,000)
			Number <sup>4</sup>	Payroll (\$1,000)	Number <sup>4</sup>	Hours (1,000)	Wages (\$1,000)				
327910, Abrasive product manufacturing .. 2002..	312	364	16 754	682 125	11 585	23 388	361 726	2 281 702	1 217 353	3 476 796	'112 694
2001..	N	N	17 013	662 881	12 068	24 366	361 854	2 204 980	1 178 949	3 395 699	108 103
2000..	N	N	20 229	757 402	14 275	29 758	418 070	2 637 403	1 412 899	4 072 731	174 919
1999..	N	N	20 785	744 347	14 024	29 601	407 330	2 858 128	1 545 621	4 369 970	113 211
1998..	N	N	21 551	756 109	14 591	32 016	450 195	2 942 787	1 740 689	4 724 254	163 942
1997..	319	360	22 571	782 054	15 894	31 023	424 991	2 918 902	1 714 596	4 660 043	155 961

<sup>1</sup>Statistics presented for years ending in 2 and 7 are census data. Interim census years are derived in a representative sample of manufacturing establishments canvassed in the Annual Survey of Manufactures (ASM).

<sup>2</sup>For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

<sup>3</sup>Includes establishments with payroll at any time during the year.

<sup>4</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 2. Industry Statistics for Selected States: 2002**

[States that are a disclosure or with less than 100 employees are not shown. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographical definitions, see note at end of table. For information on geographic areas followed by \*, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E <sup>1</sup>	All establishments <sup>2</sup>		All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number <sup>3</sup>	Payroll (\$1,000)	Number <sup>3</sup>	Hours (1,000)	Wages (\$1,000)				
327910, Abrasive product manufacturing												
United States .....	—	364	172	16 754	682 125	11 585	23 388	361 726	2 281 702	1 217 353	3 476 796	'112 694
California .....	1	36	15	956	35 744	671	1 416	18 958	102 409	63 884	164 601	'14 198
Connecticut .....	—	9	2	370	17 824	222	521	7 144	28 020	37 247	65 893	D
Florida .....	—	9	5	181	8 615	116	216	4 458	8 094	19 543	41 502	'1 066
Georgia .....	1	6	5	177	7 608	119	252	4 314	43 930	10 800	55 045	D
Illinois .....	—	39	21	1 833	86 664	1 111	2 342	35 037	225 535	139 455	368 330	'9 842
Indiana .....	—	9	5	229	8 562	175	359	5 067	19 836	6 964	27 024	'552
Kentucky .....	2	3	1	104	3 236	70	131	1 626	7 163	4 181	11 422	D
Massachusetts .....	—	21	13	2 193	110 697	1 274	2 756	45 428	225 802	132 784	358 788	'9 632
Michigan .....	4	34	14	905	36 698	645	1 319	21 167	142 463	79 800	219 606	'5 114
New Hampshire .....	1	5	4	176	6 538	129	239	3 650	15 698	9 891	26 013	'221
New Jersey .....	1	11	4	171	6 666	111	214	3 400	14 693	8 857	23 488	'224
New York .....	—	29	18	2 016	83 952	1 463	2 816	49 123	257 736	148 440	371 570	'15 511
Ohio .....	—	36	17	1 692	74 037	1 164	2 491	38 661	202 290	102 925	305 622	'8 289
Pennsylvania .....	1	20	8	489	20 041	341	735	12 337	51 167	31 861	83 259	'1 667
Tennessee .....	2	4	3	201	6 889	145	324	4 417	16 586	4 594	21 090	D
Texas .....	1	18	6	919	28 422	744	1 546	17 904	85 004	64 456	145 460	'3 186
Virginia .....	3	6	5	439	16 854	297	547	9 657	51 565	27 211	78 645	'1 222
Washington .....	1	6	2	147	4 888	104	209	2 703	10 650	5 769	16 714	'285

<sup>1</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1—10 to 19 percent; 2—20 to 29 percent; 3—30 to 39 percent; 4—40 to 49 percent; 5—50 to 59 percent; 6—60 to 69 percent; 7—70 to 79 percent; 8—80 to 89 percent; 9—90 percent or more.

<sup>2</sup>Includes establishments with payroll at any time during the year.

<sup>3</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

**Table 3. Detailed Statistics by Industry: 2002**

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Item	Value
<b>327910, Abrasive product manufacturing</b>	
Companies <sup>1</sup> .....	number.. 312
All establishments <sup>2</sup> .....	number.. 364
Establishments with 1 to 19 employees .....	number.. 192
Establishments with 20 to 99 employees .....	number.. 137
Establishments with 100 employees or more .....	number.. 35
All employees <sup>3</sup> .....	number.. 16 754
Total compensation .....	\$1,000.. 874 768
Annual payroll .....	\$1,000.. 682 125
Total fringe benefits .....	\$1,000.. 192 643
Production workers, average for year .....	number.. 11 585
Production workers on March 12 .....	number.. 11 439
Production workers on May 12 .....	number.. 11 819
Production workers on August 12 .....	number.. 11 510
Production workers on November 12 .....	number.. 11 552
Production worker hours .....	1,000.. 23 388
Production worker wages .....	\$1,000.. 361 726
Total cost of materials .....	\$1,000.. 1 217 353
Materials, parts, containers, packaging, etc., used .....	\$1,000.. 950 098
Resales .....	\$1,000.. 143 492
Purchased fuels .....	\$1,000.. 26 866
Purchased electricity .....	\$1,000.. 56 503
Contract work .....	\$1,000.. 40 394
Quantity of electricity purchased for heat and power .....	1,000 kWh.. 1 205 095
Quantity of electricity generated less sold for heat and power .....	1,000 kWh.. 10 227
Total value of shipments .....	\$1,000.. 3 476 796
Primary products value of shipments .....	\$1,000.. 3 141 591
Secondary products value of shipments .....	\$1,000.. 90 063
Total miscellaneous receipts .....	\$1,000.. 245 142
Value of resales .....	\$1,000.. 236 475
Contract receipts .....	\$1,000.. 6 380
Other miscellaneous receipts .....	\$1,000.. 2 287
Primary products specialization ratio .....	percent.. 97
Value of primary products shipments made in all industries .....	\$1,000.. 3 320 518
Value of primary products shipments made in this industry .....	\$1,000.. 3 141 591
Value of primary products shipments made in other industries .....	\$1,000.. 178 927
Coverage ratio .....	percent.. 95
Value added .....	\$1,000.. 2 281 702
Total inventories, beginning of year .....	\$1,000.. 533 953
Finished goods inventories .....	\$1,000.. 161 474
Work-in-process inventories .....	\$1,000.. 203 587
Materials and supplies inventories .....	\$1,000.. 169 164
Total inventories, end of year .....	\$1,000.. 549 160
Finished goods inventories .....	\$1,000.. 166 051
Work-in-process inventories .....	\$1,000.. 221 269
Materials and supplies inventories .....	\$1,000.. 162 043
Gross value of depreciable assets (acquisition costs) at beginning of year .....	\$1,000.. '2 217 495
Total capital expenditures (new and used) .....	\$1,000.. '112 694
Buildings and other structures (new and used) .....	\$1,000.. '15 932
Machinery and equipment (new and used) .....	\$1,000.. '96 762
Automobiles, trucks, etc., for highway use .....	\$1,000.. '3 164
Computers and peripheral data processing equipment .....	\$1,000.. '5 415
All other expenditures for machinery and equipment .....	\$1,000.. '88 183
Total retirements .....	\$1,000.. '92 984
Gross value of depreciable assets at end of year .....	\$1,000.. '2 237 205
Depreciation charges during year .....	\$1,000.. '138 270
Total rental payments .....	\$1,000.. 39 725
Buildings and other structures .....	\$1,000.. 23 952
Machinery and equipment .....	\$1,000.. 15 773
Total other expenses <sup>4</sup> .....	\$1,000.. 245 932
Response coverage ratio <sup>5</sup> .....	percent.. 88
Repair and maintenance services of buildings and/or machinery <sup>4</sup> .....	\$1,000.. 49 061
Communications services <sup>4</sup> .....	\$1,000.. 8 313
Legal services <sup>4</sup> .....	\$1,000.. 3 809
Accounting, auditing, and bookkeeping services <sup>4</sup> .....	\$1,000.. 2 679
Advertising and promotional services <sup>4</sup> .....	\$1,000.. 10 244
Expensed computer hardware and supplies and purchased computer services <sup>4</sup> .....	\$1,000.. 5 704
Refuse removal (including hazardous waste) services <sup>4</sup> .....	\$1,000.. 4 422
Management consulting and administrative services <sup>4</sup> .....	\$1,000.. 8 169
Taxes and license fees <sup>4</sup> .....	\$1,000.. 8 147
All other expenses <sup>4</sup> .....	\$1,000.. 145 384

<sup>1</sup>For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

<sup>2</sup>Includes establishments with payroll at any time during the year.

<sup>3</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

<sup>4</sup>Based on 2002 Annual Survey of Manufactures (ASM) sample data.

<sup>5</sup>A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those Annual Survey of Manufactures (ASM) establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note 1: The amounts shown for other expenses reflect only those services that establishments purchase from other companies.

Note 2: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 4. Industry Statistics by Employment Size: 2002**

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Employment size class	E <sup>1</sup>	All establishments <sup>2</sup>	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number <sup>3</sup>	Payroll (\$1,000)	Number <sup>3</sup>	Hours (1,000)	Wages (\$1,000)				
327910, Abrasive product manufacturing											
All establishments .....	—	364	16 754	682 125	11 585	23 388	361 726	2 281 702	1 217 353	3 476 796	'112 694
Establishments with—											
1 to 4 employees .....	9	81	164	6 133	114	199	3 683	15 641	10 302	25 964	'579
5 to 9 employees .....	5	54	380	15 277	260	521	9 104	49 295	29 243	78 800	'1 346
10 to 19 employees .....	4	57	769	32 053	500	1 019	16 910	88 911	60 200	149 492	'4 762
20 to 49 employees .....	1	94	3 020	114 418	2 112	4 286	60 926	318 110	222 405	543 363	'12 138
50 to 99 employees .....	—	43	3 089	114 798	2 238	4 612	63 902	324 441	170 425	495 065	'25 636
100 to 249 employees .....	1	23	3 432	140 905	2 401	4 837	77 678	465 291	266 365	701 269	'20 296
250 to 499 employees .....	—	8	h	D	D	D	D	D	D	D	D
500 to 999 employees .....	—	3	g	D	D	D	D	D	D	D	D
1,000 to 2,499 employees .....	—	1	g	D	D	D	D	D	D	D	D
2,500 employees or more .....	—	—	—	—	—	—	—	—	—	—	—
Administrative records <sup>4</sup> .....	9	129	639	25 910	442	874	15 687	66 933	45 206	112 136	'2 596

<sup>1</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

<sup>2</sup>Includes establishments with payroll at any time during the year.

<sup>3</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

<sup>4</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 5. Industry Statistics by Primary Product Class Specialization: 2002**

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry or product class code	Industry or primary product class	All establishments <sup>1</sup>	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number <sup>2</sup>	Payroll (\$1,000)	Number <sup>2</sup>	Hours (1,000)	Wages (\$1,000)				
327910	Abrasive product manufacturing .....	364	16 754	682 125	11 585	23 388	361 726	2 281 702	1 217 353	3 476 796	'112 694
3279101	Nonmetallic sized grains, powders, and flour abrasives (including graded products only) .....	32	2 414	89 202	1 646	3 235	52 053	540 079	284 298	800 012	'38 432
3279104	Nonmetallic abrasive products (including diamond abrasives) .....	104	5 656	261 285	3 479	7 424	116 768	561 256	304 947	870 127	'21 776
3279107	Nonmetallic coated abrasive products and buffing wheels, polishing wheels, and laps .....	73	7 084	259 278	5 405	10 607	158 646	988 522	512 557	1 496 119	'41 205
327910A	Metal abrasives including steel and iron grid, shot, and sand, and other metal abrasives .....	9	626	37 133	327	656	11 762	105 489	61 864	170 398	7 079

<sup>1</sup>Includes establishments with payroll at any time during the year.

<sup>2</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 6a. **Products Statistics: 2002 and 1997**

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)
327910	Abrasive product manufacturing .....	2002.. N 1997.. N	X X	X X	3 320 518 4 107 840
3279101	Nonmetallic sized grains, powders, and flour abrasives (including graded products only) .....	2002.. N 1997.. N	X X	X X	586 700 549 166
32791011	Aluminum oxide, nonmetallic sized grains, powders, and flour abrasives (including graded products only) .....	2002.. N 1997.. N	X X	X X	233 812 158 946
327910111	Aluminum oxide, nonmetallic sized grains, powders, and flour abrasives (including graded products only) .....	2002.. 17 1997.. 13	X X	X X	233 812 158 946
32791012	Nonmetallic sized grains, powders, and flour abrasives, except aluminum oxide .....	2002.. N 1997.. N	X X	X X	345 708 380 062
327910121	Silicon carbide, nonmetallic sized grains, powders, and flour abrasives (including graded products only) .....	2002.. 12 1997.. 13	X X	X X	80 073 137 456
327910122	Other nonmetallic artificial sized grains, powders, and flour abrasives (including combinations thereof) .....	2002.. 14 1997.. 20	X X	X X	D 209 953
327910123	Nonmetallic natural sized grains, powders, and flours .....	2002.. 3 1997.. 10	X X	X X	D 32 653
3279101Y	Nonmetallic sized grains, powders, and flour abrasives (including graded products only), nsk .....	2002.. N 1997.. N	X X	X X	7 180 10 158
3279101YVV	Nonmetallic sized grains, powders, and flour abrasives (including graded products only), nsk .....	2002.. N 1997.. N	X X	X X	7 180 10 158
3279104	Nonmetallic abrasive products (including diamond abrasives) .....	2002.. N 1997.. N	X X	X X	952 378 1 176 259
32791041	Nonmetallic vitrified bond, artificial and natural bonded abrasives (including diamond abrasives) .....	2002.. N 1997.. N	X X	X X	191 713 253 075
327910411	Nonmetallic vitrified bond, artificial and natural bonded abrasives (including diamond abrasives) .....	2002.. 15 1997.. 26	X X	X X	191 713 253 075
32791042	Nonmetallic resinoid and shellac bond, artificial and natural bonded abrasives, including diamond abrasives .....	2002.. N 1997.. N	X X	X X	255 823 279 657
327910421	Nonmetallic resinoid and shellac bonded abrasives, reinforced .....	2002.. 19 1997.. 27	X X	X X	116 951 123 944
327910422	Nonmetallic resinoid and shellac bonded abrasives, nonreinforced .....	2002.. 20 1997.. 22	X X	X X	138 872 155 713
32791043	Diamond wheels, nonmetallic, artificial and natural bonded abrasives, including diamond abrasives .....	2002.. N 1997.. N	X X	X X	198 185 221 994
327910431	Diamond wheels, metal bond, nonmetallic, artificial and natural bonded abrasives, including diamond abrasives .....	2002.. 27 1997.. 40	X X	X X	95 873 148 844
327910432	Diamond wheels, nonmetal bond, nonmetallic, artificial and natural bonded abrasives, including diamond abrasives .....	2002.. 24 1997.. 34	X X	X X	102 312 73 150
32791044	Other nonmetallic artificial and natural abrasive products (except coated abrasives) .....	2002.. N 1997.. N	X X	X X	306 657 416 669
327910441	Nonmetallic rubber bond, artificial and natural bonded abrasives (including diamond abrasives) .....	2002.. 6 1997.. 14	X X	X X	9 696 41 816
327910442	Other nonmetallic bonded abrasives, artificial and natural bonded abrasives (including diamond abrasives) .....	2002.. 44 1997.. 15	X X	X X	147 047 190 514
327910443	Nonmetallic cubic boron nitride wheels, all bonds, artificial and natural bonded abrasives (including diamond abrasives) .....	2002.. 15 1997.. 27	X X	X X	30 323 60 426
327910444	Other artificial and natural nonmetallic abrasive products (except coated abrasives) .....	2002.. 11 1997.. 23	X X	X X	119 591 123 913
3279104Y	Nonmetallic abrasive products (including diamond abrasives), nsk .....	2002.. N 1997.. N	X X	X X	— 4 864
3279104YVV	Nonmetallic abrasive products (including diamond abrasives), nsk .....	2002.. N 1997.. N	X X	X X	— 4 864
3279107	Nonmetallic coated abrasive products and buffing wheels, polishing wheels, and laps .....	2002.. N 1997.. N	X X	X X	1 515 272 2 026 254
32791071	Nonmetallic belts, coated or impregnated with any natural or artificial abrasive material .....	2002.. N 1997.. N	X X	X X	271 448 478 909
327910711	Nonmetallic belts, coated or impregnated with any natural or artificial abrasive material, cloth-glue bond .....	2002.. 8 1997.. 6	X X	X X	45 520 D
327910712	Nonmetallic belts, coated or impregnated with any natural or artificial abrasive material, cloth-resin and waterproof bond .....	2002.. 14 1997.. 15	X X	X X	225 928 D
32791072	Nonmetallic shapes, coated or impregnated with any natural or artificial abrasive material .....	2002.. N 1997.. N	X X	X X	539 513 700 934
327910721	Other nonmetallic shapes, coated or impregnated with any natural or artificial abrasive material, cloth-glue bond .....	2002.. 11 1997.. 8	X X	X X	103 631 81 819
327910722	Other nonmetallic shapes, coated or impregnated with any natural or artificial abrasive material, cloth-resin and waterproof bond .....	2002.. 33 1997.. 20	X X	X X	435 882 619 115

See footnotes at end of table.



Table 6a. **Products Statistics: 2002 and 1997—Con.**

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)
327910	Abrasive product manufacturing—Con.				
3279107	Nonmetallic coated abrasive products and buffing wheels, polishing wheels, and laps—Con.				
32791073	Other nonmetallic coated abrasive products and buffing wheels, polishing wheels, and laps .....	2002.. N	X	X	695 873
		1997.. N	X	X	801 363
3279107311	Nonmetallic paper-glue bond, coated or impregnated with any natural or artificial abrasive material .....	2002.. 16	X	X	227 304
		1997.. 10	X	X	261 446
3279107321	Other nonmetallic coated or impregnated with any natural or artificial abrasive material (paper-cloth or vulcanized fiber-cloth combinations, vulcanized fibers, paper-resin, waterproof bond, etc.) .....	2002.. 22	X	X	378 706
		1997.. 17	X	X	450 946
3279107331	Buffing and polishing wheels and laps of cloth, leather, felt, etc., but containing no abrasive grains, powders, or flour .....	2002.. 19	X	X	89 863
		1997.. 20	X	X	88 971
3279107Y	Nonmetallic coated abrasive products and buffing wheels, polishing wheels, and laps, nsk .....	2002.. N	X	X	8 438
		1997.. N	X	X	45 048
3279107YV	Nonmetallic coated abrasive products and buffing wheels, polishing wheels, and laps, nsk .....	2002.. N	X	X	8 438
		1997.. N	X	X	45 048
327910A	Metal abrasives including steel and iron grid, shot, and sand, and other metal abrasives .....	2002.. N	X	X	130 499
		1997.. N	X	X	136 642
327910A1	Metal abrasives including steel and iron grid, shot, and sand, and other metal abrasives .....	2002.. N	X	X	130 499
		1997.. N	X	X	136 642
327910A100	Metal abrasives including steel and iron grid, shot, and sand, and other metal abrasives .....	2002.. 17	X	X	130 499
		1997.. N	X	X	N
327910W	Abrasive product manufacturing, nsk, total .....	2002.. N	X	X	135 669
		1997.. N	X	X	219 519
327910WY	Abrasive product manufacturing, nsk, total .....	2002.. N	X	X	135 669
		1997.. N	X	X	219 519
327910WYWW	Abrasive product manufacturing, nsk, for nonadministrative-record establishments .....	2002.. N	X	X	26 057
		1997.. N	X	X	47 379
327910WYWY	Abrasive product manufacturing, nsk, for administrative-record establishments .....	2002.. N	X	X	109 612
		1997.. N	X	X	172 140

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p–10 to 19 percent estimated; q–20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 6b. Product Class Shipments for Selected States: 2002 and 1997**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 2002. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographic definitions, see note at end of table. For information on geographic areas followed by \*, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)
3279101	Nonmetallic sized grains, powders, and flour abrasives (including graded products only)	
	United States .....	2002 .. 586 700
		1997 .. 549 166
	Illinois .....	2002 .. 32 900
		1997 .. 38 347
	Massachusetts .....	2002 .. 45 964
		1997 .. 127 756
	New York .....	2002 .. 94 204
		1997 .. 155 641
	Ohio .....	2002 .. 13 136
		1997 .. N
	Texas .....	2002 .. 13 434
		1997 .. 6 217
3279104	Nonmetallic abrasive products (including diamond abrasives)	
	United States .....	2002 .. 952 378
		1997 .. 1 176 259
	California .....	2002 .. 34 846
		1997 .. 50 701
	Connecticut .....	2002 .. 41 549
		1997 .. 45 851
	Florida .....	2002 .. 23 383
		1997 .. 22 398
	Illinois .....	2002 .. 116 466
		1997 .. 122 653
	Indiana .....	2002 .. 22 535
		1997 .. 25 696
	Michigan .....	2002 .. 37 080
		1997 .. 65 144
	New Jersey .....	2002 .. 12 828
		1997 .. 31 589
	New York .....	2002 .. 20 844
		1997 .. 44 914
	Ohio .....	2002 .. 203 252
		1997 .. 224 337
	Pennsylvania .....	2002 .. 33 285
		1997 .. 59 420
3279107	Nonmetallic coated abrasive products and buffing wheels, polishing wheels, and laps	
	United States .....	2002 .. 1 515 272
		1997 .. 2 026 254
	California .....	2002 .. 79 886
		1997 .. 58 394
	Illinois .....	2002 .. 98 759
		1997 .. 15 911
	Massachusetts .....	2002 .. 61 580
		1997 .. 10 121
	Michigan .....	2002 .. 145 402
		1997 .. N
	New York .....	2002 .. 226 342
		1997 .. 310 195
	Ohio .....	2002 .. 91 656
		1997 .. 153 272
	Pennsylvania .....	2002 .. 39 929
		1997 .. N
327910A	Metal abrasives including steel and iron grid, shot, and sand, and other metal abrasives	
	United States .....	2002 .. 130 499
		1997 .. 136 642
	Michigan .....	2002 .. 18 462
		1997 .. N

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

**Table 7. Materials Consumed by Kind: 2002 and 1997**

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Material code	Material consumed	Quantity	Delivered cost (\$1,000)
327910	Abrasive product manufacturing		
00900001	Total materials .....2002..	X	950 098
	.....1997..	X	1 473 689
32791003	Abrasives and abrasive products .....2002..	X	364 724
	.....1997..	X	N
32518811	Synthetic aluminum oxide .....2002..	X	18 660
	.....1997..	X	N
00190039	Diamonds .....2002..	X	41 535
	.....1997..	X	94 322
31320005	Cotton and manmade fiber fabrics, broadwoven and narrow woven .....2002..	X	79 911
	.....1997..	X	148 490
32200001	Paper and paperboard products (including paperboard boxes, containers, and corrugated paperboard) .....2002..	X	50 077
	.....1997..	X	134 268
325000A8	Industrial inorganic chemicals (excluding synthetic aluminum oxide, glues and adhesives, and other chemicals and allied products) .....2002..	X	24 266
	.....1997..	X	N
32552002	Glues and adhesives.....2002..	X	29 738
	.....1997..	X	N
32500035	Other chemicals and allied products .....2002..	X	37 509
	.....1997..	X	43 152
32610015	Fabricated plastics products, including plastics closures, film, and packaging items (excluding containers) .....2002..	X	17 130
	.....1997..	X	N
00970099	All other materials and components, parts, containers, and supplies.....2002..	X	130 989
	.....1997..	X	907 168
00971000	Materials, ingredients, containers, and supplies, nsk .....2002..	X	155 559
	.....1997..	X	146 289

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p-10 to 19 percent estimated; q-20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.